

**NORTH CAROLINA DIVISION OF  
AIR QUALITY**

# Application Review

Issue Date: ??

**Region:** Winston-Salem Regional Office  
**County:** Guilford  
**NC Facility ID:** 4100823  
**Inspector's Name:** Taylor Hartsfield  
**Date of Last Inspection:** 06/21/2016  
**Compliance Code:** 3 / Compliance - inspection

<p style="text-align: center;"><b>Facility Data</b></p> <p><b>Applicant (Facility's Name):</b> N. S. Flexibles, LLC</p> <p><b>Facility Address:</b>  N. S. Flexibles, LLC  2619 Phoenix Drive  Greensboro, NC 27406</p> <p><b>SIC:</b> 2759 / Commercial Printing, Nec  <b>NAICS:</b> 323111 / Commercial Gravure Printing</p> <p><b>Facility Classification: Before:</b> Title V <b>After:</b> Title V  <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V</p>	<p style="text-align: center;"><b>Permit Applicability (this application only)</b></p> <p><b>SIP:</b> N/A  <b>NSPS:</b> N/A  <b>NESHAP:</b> N/A  <b>PSD:</b> N/A  <b>PSD Avoidance:</b> N/A  <b>NC Toxics:</b> N/A  <b>112(r):</b> N/A  <b>Other:</b> Remove 15A NCAC 02D .0958</p>
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Contact Data			Application Data
<p style="text-align: center;"><b>Facility Contact</b></p> <p>Nicholas Pace  Facilities Manager  (336) 292-9911  2619 Phoenix Drive  Greensboro, NC 27406</p>	<p style="text-align: center;"><b>Authorized Contact</b></p> <p>Tim Mages  President and General Manager  (336) 292-9911  2619 Phoenix Drive  Greensboro, NC 27406</p>	<p style="text-align: center;"><b>Technical Contact</b></p> <p>Nicholas Pace  Facilities Manager  (336) 292-9911  2619 Phoenix Drive  Greensboro, NC 27406</p>	<p><b>Application Number:</b> 4100823.17A  <b>Date Received:</b> 01/30/2017  <b>Application Type:</b> Renewal  <b>Application Schedule:</b> TV-Renewal</p> <p style="text-align: center;"><b>Existing Permit Data</b></p> <p><b>Existing Permit Number:</b> 02221/T19  <b>Existing Permit Issue Date:</b> 04/08/2015  <b>Existing Permit Expiration Date:</b> 06/30/2017</p>

Total Actual emissions in TONS/YEAR:							
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2015	---	0.7400	229.82	0.6200	0.0600	0.0134	0.0134 [Hexane, n-]
2014	---	0.7400	290.73	0.6200	0.0500	0.0134	0.0134 [Hexane, n-]
2013	---	0.6300	274.62	0.5300	0.0400	0.0114	0.0114 [Hexane, n-]
2012	---	0.5000	226.54	0.4100	0.0300	0.0089	0.0089 [Hexane, n-]
2011	---	0.2900	157.45	0.2400	0.0200	0.0052	0.0052 [Hexane, n-]

<p><b>Review Engineer:</b> Brian Bland</p> <p><b>Review Engineer's Signature:</b> _____ <b>Date:</b> ??</p>	<p style="text-align: center;"><b>Comments / Recommendations:</b></p> <p><b>Issue</b> 02221/T20  <b>Permit Issue Date:</b> ??, 2017  <b>Permit Expiration Date:</b> ??, 2022</p>
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## **1. Purpose of Application**

N. S. Flexibles, LLC (N. S. Flexibles) currently holds Title V Permit No. 02221T19 with an expiration date of June 30, 2017 for a packaging material manufacturing facility in Greensboro, Guilford County, North Carolina. This permitting action is for a renewal of an existing Title V Air Permit pursuant to 15A NCAC 02Q .0513. On May 9, 2017, the application was changed to a Renewal with Modification, when the facility submitted application forms and fee to add the “Plate Making Room and Solvent Still” to the permit.

## **2. Facility Description**

N. S. Flexibles is a contract package printing facility that produces multicolor plastic packaging materials. The facility operates printing presses that use ink and solvents to print on flexible plastic that will be used for packaging (e.g., potato chip bags, bread bags, etc.). The facility includes several printing stations, a print plate shop, seam and shear stations, and a solvent recovery area. The facility operates 24 hours per day, five to seven days per week, and 52 weeks per year.

## **3. Application Chronology**

January 30, 2017	Application for renewal received.
March 1, 2017	Additional Information Request regarding missing Application Form E5 sent.
March 3, 2017	Additional Information Request concerning emissions from ID No. I6 “Plate Making Room and Solvent Still” potentially exceeding the 15A NCAC 02Q .0503(8) potential emissions threshold for an insignificant activity.
May 2, 2017	Draft permit and draft review document sent to Taylor Hartsfield, Winston-Salem Regional Office (WSRO) and Samir Parekh of Stationary Source Compliance Branch for comments.
May 2, 2017	Draft permit forwarded to Nick Pace and Tim Mages of N. S. Flexibles for comments.
May 3, 2017	Received comments on draft permit from Nick Pace saying that “it looks to be in order.”
May 8, 2017	Response received from WSRO that they have no comment on the draft permit.
May 9, 2017	Response to Additional Information Request received. Facility agreed that VOC emissions from this source exceed the insignificant activity threshold, and submitted application forms and fee to add this source to the permit.
??, 2017	Draft permit sent to Public Notice and EPA review.
??, 2017	Public comment period ends.
??, 2017	Last day of EPA comment period.

#### 4. Changes to Existing Permit

Page(s)	Section	Description of Change(s)
N/A	Insignificant Activities	<ul style="list-style-type: none"> <li>Label sources covered under the VOC PAL</li> <li>Update note 3 to include new webpage URL</li> <li>Move ID No. I6 “Plate Making Room and Solvent Still” to permitted items list</li> </ul>
All	All	<ul style="list-style-type: none"> <li>Update dates, permit revision number, Winston-Salem regional office address and Department name</li> <li>Replace “2D” and “2Q” with “02D” and “02Q”</li> <li>Update formatting to current template</li> <li>Correct minor grammatical errors</li> </ul>
3	Permitted Items	<ul style="list-style-type: none"> <li>Label sources covered under the VOC PAL</li> <li>Add (ID No. ES-6) Plate Making Room and Solvent Still (formerly ID No. I6)</li> </ul>
4	2.1 A	<ul style="list-style-type: none"> <li>Remove 15A NCAC 02D .0958 from summary of limits and standards table</li> </ul>
5	2.1 A. 2. c	<ul style="list-style-type: none"> <li>Remove propane from Monitoring/Recordkeeping/Reporting section as it is not a permitted fuel</li> </ul>
6	2.1 A. 3. c	<ul style="list-style-type: none"> <li>Remove propane and No. 2 fuel oil from Monitoring/Recordkeeping/Reporting section as they are not permitted fuels</li> </ul>
N/A	2.2 A. 2 (T19)	<ul style="list-style-type: none"> <li>Remove the regulation 15A NCAC 02D .0958 because it no longer applies statewide as of November 1, 2016</li> </ul>
8	2.2 A. 2. d	<ul style="list-style-type: none"> <li>Add “The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if the records are not maintained.”</li> </ul>
8	2.2 A. 3	<ul style="list-style-type: none"> <li>Add ammonia to 15A NCAC 02Q .0711 table</li> </ul>
10	2.3 A. 1	<ul style="list-style-type: none"> <li>Update to include Plate Making Room and Solvent Still as a permitted source and not an insignificant activity.</li> <li>Rework section to correct errors and improve clarity</li> </ul>
14	3	<ul style="list-style-type: none"> <li>Update General Conditions to version 4.0</li> </ul>

In response to a DAQ March 3, 2017 Additional Information Request, N. S. Flexibles submitted a permit application to move the (formerly ID No. I6, now ID No. ES-6) “Plate Making Room and Solvent Still” from the insignificant activities list to the air permit. The VOC emissions from this process exceed the 15A NCAC 02Q .0503(8) emission threshold of five tons (potential) per year to be classified as an insignificant activity. The December 10, 2014 WSRO inspection report describes the process as “...the plate making process involves a digital imaging process. The process uses a washer that utilizes an alcohol wash solution. The still processes the spent alcohol wash solution.”

In the permit application to add the Plate Making Room and Solvent Still, N. S. Flexibles calculated the actual 2016 emissions as follows:

Nysolv A Premix	7.53 lbs/gal X * 440 Gallons = 3,313.2 Lbs.
Nysolv A	7.12 lbs/gal X * 165 Gallons = 1,174.8 Lbs.
Nysolv Comp A	6.75 lbs/gal X * 1,100 Gallons = 7,425 Lbs.
Nysolv Isomix	7.08 lbs/gal X *1,100 Gallons = 7,788 Lbs.

Or 5.92 Tons

- \*Plate Making Solvent Purchased 2016
- \*\*Plate Making Still Bottom 2016
- \*\*\*Plate Making Square Feet of Plates 2016

N. S. Flexibles calculated the potential Plate Making Room and Solvent Still emissions to be 12.47 tons VOC per year with a production of ~111,953 square feet of plates.

## 6. Emissions

N. S. Flexibles is a major Prevention of Significant Deterioration (PSD) source as potential emissions of VOC are above 250 tons per year. Additionally, the facility has a Plantwide Applicability Limit (PAL) of 407 tons per year of VOC emissions per rolling 12-month period. While recent facility-wide emissions are reflected in the header of this document, VOC emissions from specific emission groups are provided in the table below.

Emission Sources	Actual VOC Emissions (tons/per year)		
	2013	2014	2015
ES-U10, MA20, WH11	227.4	249.8	188.21
ES-C7, WH12, WH13	42.4	36.4	32.33
Plate Making Room and Solvent Still	4.78	4.49	9.25
<u>Notes:</u> <ul style="list-style-type: none"><li>Emission data of significant sources of VOC as shown in IBEAM-ED for calendar years 2013 through 2015</li></ul>			

## 7. Regulatory Review

N. S. Flexibles is subject to the following regulations. The permit was updated to reflect the most current stipulations for all applicable regulations.

- 15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes – This regulation is applicable to the all six of the permitted Web Flexographic Printing Press (ID Nos. ES-WH13, ES-WH12, ES-WH11, ES-U10, ES-C7 and ES-MA20). ID Nos. ES-WH13, ES-WH12 and ES-C7 that vent through the Natural gas-fired Regenerative Thermal Oxidizer (ID No. CD-1, 2.9 million Btu per hour heat input), while the others are uncontrolled. Due to the small amount of particulate matter (PM) emissions from these sources, continued compliance is anticipated. As described in full in the July 12, 2012 review document for 02221T17, *“Due to the amount of particulates expected from the presses being negligible; DAQ agreed to allow North State to submit a compliance demonstration utilizing maximum process rates to determine the maximum allowables as calculated using the equation found in 02D .0515 for their printing presses and keep that record on file to avoid MRR requirements since the actual particulate emissions are less than 1 tpy from all sources at the facility combined.”*
- 15A NCAC 02D .0516 “Sulfur Dioxide Emissions from Combustion Sources” – Emissions of sulfur dioxide from the Web Flexographic Printing Presses (ID Nos. ES-WH13, ES-WH12, ES-WH11, ES-U10, ES-C7 and ES-MA20) shall not exceed 2.3 pounds per million Btu heat input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard. Compliance is expected based on the low sulfur dioxide emissions associated with natural gas combustion. No monitoring, recordkeeping, or reporting is required for sulfur dioxide emissions from firing natural gas in these sources.
- 15A NCAC 02D .0521, Control of Visible Emissions – This regulation requires the facility to control any visible emissions from emission sources that may be discharged from vents or stacks. The six permitted web flexographic printing presses (ID Nos. ES-WH13, ES-WH12, ES-WH11, ES-U10, ES-C7 and ES-MA20) at N. S. Flexibles are subject to this regulation. These presses were manufactured after July 1, 1971 and must not have visible emissions of more than 20 percent opacity when averaged over a six-minute period, except as specified in 15A NCAC 02D .0521(d). No monitoring, recordkeeping, or reporting is required for visible emissions from firing natural gas in these sources. Continued compliance is expected.

- 15A NCAC 02D .0530, Prevention of Significant Deterioration - PAL Requirements

The PAL of 407 tons per year of VOC emissions Per Rolling 12-Months period shall not be exceeded from the following PAL Emissions Units:

- i. Presses controlled by the natural gas-fired regenerative thermal oxidizer (CD-1):

65" Wide Web Flexographic Printing Press with eight (8) printing stations and two (2) natural gas-fired bake ovens (2.0 MMBTU/hr total heat input) (ID No. ES-C7),

52" Wide Web Flexographic Printing Press with ten (10) printing stations and two (2) natural gas-fired bake ovens (0.64 MMBTU/hr total heat input) (ID No. ES-WH12), and

53" Wide Web Flexographic Printing Press with eight (8) printing stations and two (2) natural gas-fired bake ovens (1.02 MMBTU/hr total heat input) (ID No. ES-WH13).

- ii. Sources with no controls:

16" Narrow Web Flexographic Printing Press with six (6) printing stations (ID No. ES-MA20),

49" Wide Web Flexographic Printing Press with eight (8) printing stations. one (1) rotogravure printing station and six (6) natural gas-fired bake ovens (3.56 MMBTU/hr total heat input) (ID No. ES-U10),

52" Wide Web Flexographic Printing Press with ten (10) printing stations and two (2) natural gas-fired bake ovens (0.64 MMBTU/hr total heat input) (ID No. ES-WH11), and

Plate Making Room and Solvent Still (ID No. ES-6)

- iii. Insignificant emission sources with VOC emissions:

Propyl alcohol underground storage tank (8,000 gallons) (ID No. I2),  
Recycled solvent storage tank (4,000 gallons) (ID No. I4), and  
Ink Mixing, Ink Storage (ID No. I7).

#### Effective and Expiration Date

- iv. The Effective Date for this PAL shall be on April 8, 2015; and
- v. The Expiration Date for this PAL shall be on March 31, 2025;

As shown above, the PAL has a separate expiration date from the permit. N. S. Flexibles is required to submit an application before the expiration date to continue using the PAL.

The PAL requires that the emission factors used at the facility be re-validated every five years. The first data revalidation is due March 31, 2020.

Continued compliance is expected.

- 15A NCAC 02D .0958, Work Practices for Sources of VOC – N. S. Flexibles was previously subject to 02D .0958 because it uses VOCs as solvents, carriers, material processing media, or industrial chemical reactants, or in other similar uses; mixes, blends, or manufactures volatile organic compounds; or emits volatile organic compounds as a product of chemical reactions. However, as of November 1, 2016, this regulation no longer applies statewide and will be removed from the permit.

- 15A NCAC 02Q .0711, Emission Rates Requiring a Permit  
For each of the listed (see permit) toxic air pollutants (TAPs), the Permittee has made a demonstration that facility-wide actual emissions do not exceed the Toxic Permit Emission Rates (TPERs) listed in 15A NCAC 02Q .0711. The facility shall be operated and maintained in such a manner that emissions of any listed TAPs from the facility, including fugitive emissions, will not exceed TPERs listed in 15A NCAC 02Q .0711.
- 15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions (state-enforceable only) The permit requires the Permittee to provide for the control and prohibition of objectionable odorous emissions. This rule applies to all operations at the facility that may produce odorous emissions that can cause or contribute to objectionable odors beyond the facility's boundaries. Compliance with this standard is expected.
- 15A NCAC 02Q .0317 – Avoidance Condition  
In order to be classified as a minor source for HAPs and avoid applicability of MACT Subpart KK "National Emission Standards for the Printing and Publishing Industry," the permit includes an avoidance condition that limits rolling 12-month facility-wide emissions to:
  - (1) 10 tons of each individual HAP and
  - (2) 25 tons of any combination of HAPs.

## **8. NSPS, NESHAPS/MACT, NSR/PSD, RACT, 112(r), CAM**

### NSPS

The Permittee is not currently subject to any New Source Performance Standards. This permit modification does not affect this status.

### NESHAP/MACT/GACT

The Permittee is not currently subject to any NESHAP/MACT/GACT. This permit modification does not affect this status.

### NSR/PSD

The facility is a PSD Major source for VOC. Instead of complying with PSD through the normal process, N. S. Flexibles has elected to operate under a PAL. Provided that the facility emits less than 407 tons/year of VOC, any modification made will not be considered a major modification. See Section 6 for details of the PAL.

### 112(r)

As confirmed in Form A3 of the application, the facility "does not store any of the listed chemicals in excess of their threshold quantity." Therefore, N. S. Flexibles does not have any increased requirements under Section 112(r) of the Clean Air Act.

### RACT

The facility is not located in an area of ozone nonattainment. Therefore, RACT does not apply.

### CAM

CAM applies to a control device if the following criteria are met:

1. The unit being controlled is subject to a non-exempt emission standard (as defined by 15A NCAC 02D .0614(b)(1)),
2. The control device is being used to comply with the emission standard, and
3. The unit being controlled has potential emissions of the pollutant subject to the emission standard of greater than major source thresholds.

The only control device at the facility is the Natural gas-fired Regenerative Thermal Oxidizer (ID No. CD-1) that is used to control VOC as part of the facility's PAL. 15A NCAC 02D .0614(b)(1)(E) allows for an exemption from CAM if the control device is subject to "an emissions cap that is approved under the rules of this Subchapter and Subchapter 15A NCAC 02Q and incorporated in a permit issued under 15A NCAC 02Q .0500." The PAL meets this requirement, therefore CAM does not apply.

## **9. Facility Wide Air Toxics**

Ethyl acetate, formaldehyde, methyl isobutyl ketone, n-hexane, toluene, and xylene are included in the current permit under the 15A NCAC 02Q .0711 condition. All of these toxic air pollutants (TAPs) are emitted at levels below their respective toxic permitting emission rates (TPERs).

As part of the last permit renewal, Permit No. 02221T17 issued July 12, 2012, pursuant to Application No. 4100823.11A, the air toxics were reviewed and found to be used in quantities less than their respective TPERs. The only change to permitted emissions sources that changed air toxics emissions since the last renewal was Permit No. 02221T18 issued December 18, 2012, pursuant to Application No. 4100823.12A. This application was for the installation of a new printing press (ID No. ES-WH13). Emissions from ethyl acetate, which is an ingredient in the ink, increased with the installation of the printing press. Based on data report in the annual emissions inventories on calendar years 2013-2015, facility-wide emissions of ethyl acetate peaked at 4024.60 lbs/year in 2013. However, based on the reported 8736 hours of operation for sources emitting ethyl acetate, the hourly rate is less than 0.5 lb/hr. Ammonia was reported in small quantities in calendar years 2013-2015, therefore was added as a pollutant to the 15A NCAC 02Q .0711 condition as part of this renewal.

## **10. Public Notice/EPA and Affected State(s) Review**

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA. Also, pursuant to 15A NCAC 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 15A NCAC 02Q .0521 above.